IN THE CLAIMS:

1.(Currently Amended) A probe replacement method for a scanning probe microscope comprising:

a cantilever ~~(21)~~ provided so that a probe ~~(20)~~ faces a sample ~~(12)~~, and a measurement unit ~~(24, 31, 32)~~ for measuring a physical quantity generated between said probe and said sample when said probe scans the surface of said sample in a configuration in which the surface of said sample is scanned with said probe and the surface of said sample is measured while said physical quantity is kept constant by the measuring unit, and further comprising:

a cantilever mount ~~(22)~~ provided with a mechanism for attaching and detaching said cantilever ~~(21)~~, a cantilever storage unit ~~(30)~~ for storing a plurality of cantilevers, first movement means ~~(11)~~ for moving the position of said cantilever storage unit, and observation means ~~(18 and 19)~~ for observing the position of the mounted cantilever, said method ~~characterized in~~ comprising:

steps ~~(S11, S12; S111, S112)~~ for aligning said cantilever mount ~~(22)~~ and said cantilever storage unit ~~(30)~~ using said first movement means ~~(11)~~, selecting one cantilever from said cantilever storage unit, and mounting the cantilever on said cantilever mount; and

steps ~~(S13, S14, S15; S114 through S117)~~ for setting said mounted cantilever in a prescribed position in the field of view of said observation means ~~(18, 19)~~ after the cantilever is mounted.

2.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 1, ~~characterized in that~~wherein said cantilever is set to a prescribed position in the field of view of said observation means by moving said observation means using second movement means ~~(17)~~.

3.(orginal) The probe replacement method for a scanning probe microscope according to claim 1, ~~characterized in that~~wherein said cantilever is set to a prescribed position in the field of view of said observation means by moving said

cantilever using a positioning mechanism ~~(101)~~ moved by said first movement means ~~(11)~~.

4.(currently amended) The probe replacement method for a scanning probe microscope according to ~~any of~~ claims 1~~, through 3, characterized in that~~ wherein said observation means is an optical microscope ~~(18)~~, pattern recognition is performed using an image obtained by the optical microscope, and the mounting position of said mounted cantilever is specified.

5.(currently amended) The probe replacement method for a scanning probe microscope according to ~~any of~~ claims 1 ~~through 4~~, ~~characterized in that~~wherein said prescribed position is the center position of said field of view.

6.(Currently Amended) A probe replacement method for a scanning probe microscope comprising:

a cantilever ~~(21)~~ having a probe ~~(20)~~ at the distal end and a cantilever holder ~~(21-1)~~ at the basal end; and a measurement unit ~~(24, 31, 32)~~ for measuring a physical quantity generated between said probe and a sample ~~(12)~~ when said probe scans the surface of said sample in a configuration in which the surface of said sample is scanned with said probe and the surface of the sample is measured while said physical quantity is kept constant by the measuring unit;

a cantilever mount ~~(22)~~ provided with a mechanism for attaching and detaching said cantilever ~~(21)~~ via said cantilever holder ~~(21-1)~~, a cantilever storage unit ~~(30)~~ for storing a plurality of cantilevers, first movement means ~~(11)~~ for moving the position of the cantilever storage unit, and observation means ~~(18, 19)~~ for observing the position of the mounted cantilever ~~(21)~~; and

a positioning mechanism ~~(101)~~ moved by said first movement means ~~(11)~~, for adjusting the position of said cantilever ~~(21)~~ attached to said cantilever mount ~~(22)~~, said method ~~characterized in~~ comprising:

steps ~~(S111, S112)~~ for performing alignment between said cantilever mount ~~(22)~~ and said cantilever storage unit ~~(30)~~ using said first movement

means ~~(11)~~, selecting one cantilever from said cantilever storage unit, and mounting the cantilever on said cantilever mount ~~(22)~~ via said cantilever holder ~~(21-1)~~;

a step ~~(S113)~~ for performing alignment between said positioning mechanism ~~(101)~~ and said cantilever mount ~~(22)~~ on which said cantilever is mounted, using said first movement means ~~(11)~~;

a step ~~(S115)~~ for capturing an image of said mounted cantilever using said observation means ~~(18, 19)~~ after said selected cantilever is mounted on said cantilever mount ~~(22)~~; and

steps ~~(S116, S117)~~ for changing the position of said cantilever with respect to said cantilever mount using said positioning mechanism ~~(101)~~ and moving the position of said cantilever to a prescribed position in the field of view of said observation means.

7.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 6, ~~characterized in that~~wherein said positioning mechanism ~~(101)~~ has a pushing member ~~(102)~~ for pushing the side surface of said cantilever holder ~~(21-1)~~ attached to said cantilever mount.

8.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 7, ~~characterized in that~~wherein said pushing member ~~(102)~~ is an L-shaped pushing member that is in contact with two of the side surfaces of said cantilever holder having a rectangular planar shape.

9.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 6, ~~characterized in~~ comprising steps ~~(S118, S119)~~ for determining the attachment state of said cantilever attached to said cantilever mount.

10.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 6, ~~characterized in~~ further comprising adjustment steps ~~(S125 through S132)~~ for the optical axis adjustment of the position of the photosensor ~~(27)~~ and the laser light source ~~(26)~~ of an optical detection device for

radiating laser light onto said cantilever and generating laser light for detecting the curvature of said cantilever.

11.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 10, ~~characterized in~~ comprising steps ~~(S118 and S121)~~ for detecting the distal end position of said cantilever and storing a coordinate value thereof; and

an adjustment step for the optical axis adjustment of the position of the photosensor ~~(27)~~ and the laser light source ~~(26)~~ of an optical detection device for radiating laser light onto said cantilever and generating laser light for detecting the curvature of said cantilever based on said stored coordinate value.

12.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 6, ~~characterized in having~~ further comprising an optical microscope ~~(18)~~ as said observation means, and comprising a step ~~(S118)~~ for performing pattern recognition and image processing using an image obtained by the optical microscope; and a step ~~(S119)~~ for identifying the attachment position of said cantilever attached to said cantilever mount.

13.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 12, ~~characterized in~~ comprising a step ~~(S118)~~ for detecting the coordinate value of the distal end position or central axis of said cantilever by performing image processing of the image obtained by said observation means when said attachment position of said cantilever is identified; and a step ~~(S121)~~ for storing said coordinate value.

14.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 13, ~~characterized in~~ comprising:

a step ~~(S125)~~ for calculating a range of target positions for radiating said laser light onto said cantilever according to the type of said cantilever based on the stored coordinate value of said distal end position or said central axis of said cantilever; and

steps ~~(S128, S129)~~ for automatically setting the irradiation position of said laser light radiated onto said cantilever to a prescribed position within said radiation target range using the image obtained by said observation means and the output signal from said photosensor, while moving the position of said laser light source in relative fashion by the second movement mechanism.

15.(Currently Amended) The probe replacement method for a scanning probe microscope according to claim 14, ~~characterized in~~ comprising steps ~~(S130, S132)~~ for moving the position of said photosensor in relative fashion by third movement means and automatically setting the laser light reception position on said photosensor to a prescribed position, based on the stored coordinate value of said distal end position or said central axis of said cantilever.

16. (Currently Amended)The probe replacement method for a scanning probe microscope according to claim 14, ~~characterized in~~ comprising;

a step for determining the total surface area of the portion irradiated by the laser light on said cantilever on the basis of a prescribed method by using the entire field of view of said observation means;

a step for determining the surface area of the portion irradiated by laser light in an image processing window;

a step for determining the ratio of laser light radiated within the proper irradiation range in the entire surface area by computing the ratio of the surface areas; and

a step for determining the irradiation position of the laser light on the back surface of the cantilever on the condition that the irradiation ratio is equal to or greater than a prescribed value.